

# Palamoll® 646

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Edition dated July 2019

Valid for product produced in Ludwigshafen only

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® = Registered trademark of BASF SE

**High viscosity polymeric plasticizer for PVC and paints. Good resistance to oils and aliphatic hydrocarbons. It has only a slight tendency to migrate into plastics. Palamoll® 646 is approved for use in plasticized PVC articles for food contact applications.**

## Chemical nature

Polymeric plasticizer derived from adipic acid and butanediol

CAS number 150923-12-9

EINECS compliant (raw materials listed in EINECS)

## Delivery specification

Property	Value	Unit	Test method DIN/ASTM
Dynamic viscosity at 20 °C	10000 – 13000	mPa · s	DIN 53019 ASTM D 7042
Density at 20 °C	1.125 – 1.140	g/cm <sup>3</sup>	DIN 51757 ASTM D 4052
Platinum-cobalt color	150 max.		DIN EN ISO 6271 ASTM D 1209
Refractive index $n_D^{20}$	1.469 – 1.471		DIN 51423-2 ASTM D 1045
Acid value	2 max.	mg KOH/g	DIN EN ISO 2114 ASTM D 1045
Water content	0.05 max.	% by weight	DIN 51777, Part 1 ASTM E 203

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## Properties

Palamoll® 646 is a slightly yellowish, practically anhydrous liquid and has a mild ester odor. It is soluble in the usual organic esters, ketones, ethers, aromatic and chlorinated hydrocarbons. The product is practically insoluble in water, aliphatic hydrocarbons, vegetable and animal oils.

When Palamoll® 646 is mixed with monomeric plasticizers, a miscibility gap is observed, so that it is necessary to verify their suitability before use.

Palamoll® 646 is listed for use in food-contact applications. Information on its regulatory status according to food-contact legislation is available in a separate document that we would be pleased to send to you upon request.

## Physical data

The following physical data were measured in the BASF SE laboratories. They do not represent any legally-binding guarantee of properties for our sales product.

Pour point (DIN ISO 3016)	-17 °C
Solution temperature at the clear point (5 % S-PVC, K-value 71; DIN 53408)	162 °C
Surface tension 50 °C (Drop volume method BASF)	42.1 mN/m

Density and viscosity dependent on temperature

Temperature [°C]	Density $\rho$ [g/cm <sup>3</sup> ]	Dyn. Viscosity $\eta$ [mPa · s]
5	1.1426	49000
10	1.1387	26600
20	1.1308	11500
30	1.1229	5500
40	1.1150	2900
50	1.1071	1600

Specific heat  $C_p$  (DSC) according to DIN 51007

Temperature [°C]	Specific heat $C_p$ [J/(g · K)]
20	1.87
60	1.95
100	2.03

## Storage & Handling

Palamoll® 646 can be stored in tanks and drums constructed from normal carbon steel, e. g. A 283 grade. If severe demands are imposed on the product quality, we recommend to store it in tanks constructed from stainless steel, e. g. AISI TP 316 Ti (German steel No. 1.4541) or aluminum (AlMg3).

It is recommended to take steps to ensure the exclusion of atmospheric moisture, e. g. by storing under a blanket of dry nitrogen, as otherwise the product quality may deteriorate, e. g. the water fraction may rise, or the Palamoll® 646 may be discolored by rust in normal steel tanks.

Drums containing the product should be kept tightly closed in a well-ventilated place.

Palamoll® 646 can be stored for one year at temperatures below 40 °C, if moisture is excluded. Exceeding the recommended storage temperature can cause degradation of the product with negative impact on the quality.

If Palamoll® 646 is stored at a temperature significantly below 20 °C, it can become wax-like and may even solidify. However, this does not affect its technical properties. Prior to further handling and processing though, it should be heated to approx. 30 °C

to ensure that it attains the values given in the Delivery Specification. Only dedicated equipment should be used to discharge this product.

**Pumps:**

Cast-steel centrifugal pumps with a simple slip-ring seal are suitable.

**Flange seals:**

An example of a suitable material for seals is chemical-resistant Polytetrafluoroethylene (PTFE). Other plastics should be checked for suitability before they are taken into use.

**Safety**

When using this product, the information and advice given in our **Safety Data Sheet** should be observed. Due attention should also be given to the **precautions** necessary for handling chemicals.

**Note**

The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed.

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